NHDOT SPR2 PROGRAM
RESEARCH PROGRESS REPORT

INSTRUCTIONS:

Project Managers and/or Principal Investigators should complete a progress report at least every three months during the project duration. Reports are due the 5th of the month following the end of the quarter. Please provide a project update even if no work was done during this reporting period.

Project # 26962R		**Report Period** Year: 2017 ☐Q1 (Jan-Mar) XQ2 (Apr-Jun) ☐Q3 (Jul-Sep) ☐Q4 (Oct-Dec)
Project Title: Active Transportation Accounting: A three-pronged approach to developing metrics for project prioritization, monitoring, safety assessment, and evaluation		
Project Investigator: Amy Villamagna **Phone: 603-535-2217**		**E-mail: amvillamagna@plymouth.edu**
Project Start Date: 1 Dec 1, 2016	**Project End Date: 31 March 31, 2018**	**Project schedule status:** X On schedule ☐ Ahead of schedule ☐ Behind schedule

Brief Project Description:

This project will leverage *a)* existing datasets (participatory mapping of facility activity through the Strava App), *b)* statewide on-the-ground bike-ped monitoring initiatives (conducted in partnership with the 9 regional planning commissions in NH) (Tufts et al. 2015), *c)* efforts to develop and apply a Level of Traffic Stress (LTS) model for bicycling (MTI Report II-19), and incorporate novel public participatory GIS approaches to assess patterns of current bicycle activity and identify potential barriers to access and participation.

Progress this Quarter (include meetings, installations, equipment purchases, significant progress, etc.):

- Further summarized and statistically analyzed responses from the Public Participatory GIS (PPGIS) surveys.
- Completed connectivity analysis Manchester and the Lakes Region and assessed results within LTS framework, this involved
  - Building the biking network
  - Developing routes to key destinations from each census block group in the focal regions
  - Weighting routes in the network based on centrality (how frequently a road segment is included in an origin-destination route generated from the network analysis)
- Creation of 2 levels of LTS modeling for cost effectiveness comparison: LTS "lite" and LTS "full"
- Revised LTS Full to distinguish among: Bike Lane with Parking Present, Bike Lane with No Parking, No Bike Lane, Shoulder >=4', and No Bike Lane, Shoulder <4'
- LTS Lite was revised to include Average Annual Daily Traffic as an override to Functional Class Designation, the chief parameter for this reduced model.
- Revision of LTS coded tool in Arc GIS based on the above.
- Maps to illustrate the Accessibility analysis have been drafted for comment (to be shared at L. Getts Thesis Defense on July 21)
- Began summarizing changes in Strava biking patterns in areas where road improvements have occurred.

Items needed from NHDOT (i.e., Concurrence, Sub-contract, Assignments, Samples, Testing, etc…):

TAG meeting will occur in October 2017

Anticipated research next 3 months:

- Laura Getts will present her research in her Master's Thesis defense on July 21, 2017 at Plymouth State University.
- Summarization of PPGIS survey results and cross-analysis with LTS and Strava
- Continue to evaluate changes in bike activity in Strava potentially attributed to road improvements and paving

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Circumstances affecting project: Describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope, and budget, along with recommended solutions to those problems.

Laura Getts (GIS analyst) will be graduating from PSU and starting a new job in Colorado. She will be presenting her thesis research on July 21 and has agreed to stay on the project as an hourly employee to complete the preparation of GIS Tools for Strava data analysis, the GIS Tools for manual count to Strava comparisons and help prepare the final report and presentation to NH DOT RAC. I have hired Ms. Raegan Young to help analyze the changes in Strava ridership in areas of road improvement, and may be hiring an additional graduate student to help prepare final tools and products. At this time, I do not expect a delay in completion, but will know better in October 2017.

Tasks (from Work Plan)	Planned % Complete	Actual % Complete
Compare survey results of biking barriers (maps) to LTS patterns	50%	50%
Evaluate increases in biking activity potentially attributed to road paving (Strava 2014 & 2015)	100%	25%
Evaluate biking accessibility to key community amenities using LTS model (continued)	50%	50%
Compare biking pattern observation in Strava to ridership expected by LTS	25%	50%